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| 10/671,591      | 09/29/2003  | Shin Koike           | 243161US0           | 9971             |

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|--|------|------------|
| 22850  | 7590 | 10/04/2007 |
| OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. |      |            |
| 1940 DUKE STREET                                 |      |            |
| ALEXANDRIA, VA 22314                             |      |            |

|                     |  |
|---------------------|--|
| EXAMINER            |  |
| METZMAIER, DANIEL S |  |

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
| 1712     |              |

|                   |               |
|-------------------|---------------|
| NOTIFICATION DATE | DELIVERY MODE |
| 10/04/2007        | ELECTRONIC    |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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|                              |  |                                     |  |
|------------------------------|--|-------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/671,591   | <b>Applicant(s)</b><br>KOIKE ET AL. |  |
|                              | <b>Examiner</b><br>Daniel S. Metzmaier | <b>Art Unit</b><br>1712             |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 August 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,6-11,14-16,19-21 and 23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,6-11,14-16,19-21 and 23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Claims 1-3, 6-11, 14-16, 19-21 and 23 are pending.

#### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06 July 2007 and 29 August 2007 has been entered.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-3, 6-11, 14-16, 19-21 and 23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The amendment attempts to incorporate (the now cancelled) claim 4 limitations into claim 1. Claim 4 was directed to the particle size of a "foamable oil-in-water type emulsion". Claim 1 now recites a "foamed oil-in-water type emulsion". The difference is significant since the particle diameter is measured by a laser diffraction, which would clearly be different for

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a "foamable" versus a "foamed" emulsion and the gas of the foam would diffract the laser light. The specification clearly refers to the particle size of a "foamable oil-in-water type emulsion", i.e., before foaming. See at least original claim 4 and page 17.

Applicants do not set forth any basis for the amended limitation for a "foamed oil-in-water type emulsion".

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. Claims 1-3, 6-11, 14-16, 19-21 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear if applicants intend to define the volume average particle diameter of the emulsion of the foam. The particle diameter is measured by a laser diffraction and the gas of the foamed emulsion would diffract the laser light. It is unclear whether applicants are measuring the emulsion particles or the gas bubbles of the foamed emulsion.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-3, 6-11, 14-16, 19-21 and 23 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kao Corporation, EP 0 402 090 A2, in view of Chiou et al, US 5,378,286, and Cook et al, US 4,533,254. Kao Corporation (abstract; page 1, line 4; page 2, lines 35 et seq; page 3, lines 4-8; page 4, lines 8-11, 23-34, and 46-49, particularly lines 33 and 48; page 7, lines 3 et seq; examples and claims) disclose oil-in-water emulsions employing diglycerides at a concentration reading on the claimed range of 30 to 90% by weight of the oil phase and having unsaturated fatty acids in a concentration of 70 % or more, preferably 80 %

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or more of the diglycerides. Kao Corporation (page 4, line 33) discloses the incorporation of sugar and (page 4, line 48) clearly contemplates foams by the disclosure of at least whipped cream.

Kao Corporation (column 3, lines 6-8) discloses the preferred use of di-cis-unsaturated diglycerides at a concentration of 70 % or more. Kao Corporation (abstract; page 2, lines 42-45; page 4, lines 23-34; page 6, lines 37 et seq; examples and claims) disclose the use of emulsifiers and proteins to improve taste and stability.

The specific gravity would have been expected since the particle sizes are conventional for edible emulsions and the gravity is at or near the upper end-point of the claimed range. Any whipped air, which is clearly disclosed by the characterization as whipped cream, would clearly reduce the specific gravity with the claimed range. The claimed *trans* fatty acid content would have been inherent to the compositions since non-hydrogenated oils are commonly found in the *cis* form and the Kao Corporation references discloses the preferred high concentration of the *cis* form.

To the extent the Kao reference differs from the claims in the sufficiency of disclosure of a single composition explicitly setting forth each of the claimed limitations or the *trans* fat content, Kao discloses oil-in-water emulsions formed with an edible oil advantageously having rich flavor and lower fat content. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to employ the components within the teachings of the Kao reference for the advantageous use in making edible products.

It is well known in the food art to whip air into compositions to reduce the cost and calories thereof. Applicants have not shown the compositions commensurate in scope with the claims to be patentably distinguished and/or unobvious in view of the Kao reference.

The particular fats and glycerides are disclosed at page 8, lines 6 et seq of the Kao reference.

To the extent the Kao reference differs from the claims in the particle size, Chiou et al and Cook et al disclose emulsion forming utilizing high pressure apparatus, e.g., microfluidizer for the advantage of a small particle size, e.g., 0.25 microns. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to employ a microfluidizer in making the emulsions of Kao for the advantage of a more stable homogeneous composition.

10. Claims 1-3, 6-11, 14-16, 19-21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kao Corporation, EP 0 402 090 A2, in view of Ono et al, US 5,962,058, and Lichtenstein et al, *Effects of Different Forms of Dietary Hydrogenated Fats on Serum Lipoprotein Cholesterol Levels*, The New England Journal of Medicine, Vol 340, (6/24/1999) No. 25, pp 1933-1940, optionally further in view in view of Chiou et al, US 5,378,286, and Cook et al, US 4,533,254. Kao discloses edible oil-in-water emulsions as set forth above and incorporated herein. Kao Corporation (abstract; page 2, lines 35 et seq; page 3, lines 4-8; page 4, lines 8-11, 23-34, and 46-49, particularly lines 33 and 48; page 7, lines 3 et seq; examples and claims) disclose oil-in-water emulsions employing diglycerides at a concentration reading on the claimed range of 30

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to 90% by weight of the oil phase. Kao Corporation (page 4, line 33) discloses the incorporation of sugar and (page 4, line 48) clearly contemplates foams by the disclosure of at least whipped cream. The Kao products are characterized as oil-in-water emulsions formed with an edible oil advantageously having rich flavor and lower fat content useful in a number of edible products including whipped creams.

To the extent the Kao reference differs from the claims in the sufficiency of disclosure of a single composition explicitly setting forth each of the claimed limitations, Ono et al discloses foamable emulsions for whipped products employing oils having a high degree of saturated fatty acid components. Ono et al further exemplifies the use hardened oils, which are known to produce undesirable trans fats.

Lichtenstein et al teaches the *cis* fatty acid configuration is desirable to the *trans* forms since the *trans* forms have detrimental effects on the serum lipoprotein cholesterol levels.

These references are combinable because they teach whipped edible products. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to employ the edible oil formulations of Kao in the formulations of Ono et al for their advantageous low fat and advantageous unsaturated *cis* fats.

To the extent the Kao reference differs from the claims in the particle size, Chiou et al and Cook et al disclose emulsion forming utilizing high pressure apparatus, e.g., microfluidizer for the advantage of a small particle size, e.g., 0.25 microns. It would have been obvious to one of ordinary skilled in the art at the time of applicants'



invention to employ a microfluidizer in making the emulsions of Kao for the advantage of a more stable homogeneous composition.

***Response to Arguments***

11. Applicant's arguments filed 29 August 2007 have been fully considered but they are not persuasive.

12. Applicants (page 7 of response) assert applicants have discovered the improved sweet taste by selecting the average particle diameter of 0.9 microns or less and direct attention to the data in the specification pages 19-33. This has not been deemed persuasive for the following reasons:

(1) Initially, analysis of the data for the claimed subject matter does not reach applicants' conclusion since the data and the claims are directed to different particle sizes set forth, i.e., the claimed foamed emulsion versus the disclosed foamable emulsion particle size.

(2) For data showing unexpected results, said data must be (a) commensurate in scope with the claimed subject matter, (b) compare the closest prior art, (c) show results are statistically significant, (d) there must exist a nexus between the alleged results and the claimed subject matter and (e) the results must be unexpected and unobvious and not just different.

The data is not deemed to be commensurate in scope with the claims since the claims limit a different particle size than the data supports. Also, claim 1 does not set forth sugars, which applicants' results require to have any sweetening effect.

Furthermore, it is unclear that the results are statistically significant due to the limited showing.

The showing does not clearly show the closest prior art since it is unclear how the sole comparative example was prepared.

The method of making the emulsions are not the only factor determining the particle size of the emulsion and may at least further include the matching the emulsification ability of the emulsifiers to the oils to be emulsified.

Lastly, the smaller particle size would be expected to have a better feel based on the a more homogeneous composition that inhibits creaming, which would by the nature of the growth of lipid globules would be expected to have an oily feel and oily and/or fatty taste. Furthermore, applicants employ known commercially available high pressure homogenizers for their intended use of emulsion formation. See for example Chiou et al, US 5,378,286 (example 2), which employs a microfluidizer at 15000 psi (~100 Mpa). See also Cook et al, US 4,533,254.

Furthermore and since the sugars reside in the continuous aqueous phase, the finer the emulsion droplets would be expected to provide the more sugar for a sweet effect rather than lipid globules.

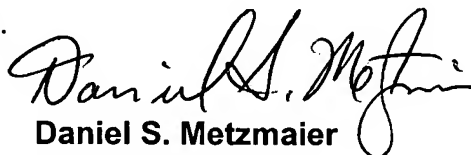
13. Applicants (pages 8 and 9) assert none of the references show the particle size of the claimed emulsions. This has not been deemed persuasive since applicants are employing known emulsification methods and apparatus (commercially available) in making said emulsions for their art recognized advantage of smaller particle sizes.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**Daniel S. Metzmaier**  
**Primary Examiner**  
**Art Unit 1712**

DSM